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(54) Abstract Title.
Lancet

(57) A lancet has a needle (2) embedded in an elongate plastics body (1) with its tip (6) concealed in a cap (4) integrally moulded with the body (1) but connected only through a narrow neck (5) which enables the cap (4) to be twisted and broken free of the body (1), exposing the needle tip (6). The cap (4) has a central aperture (8) and is adapted to fit the forward end of a firing device for the lancet, once freed from the body (1). The cap (4) then serves as a platform against which a finger to be pricked is pressed, the needle tip (6) projecting momentarily through the aperture (8). The cap (4) may be reversible, and be fitted to the firing device either way up.

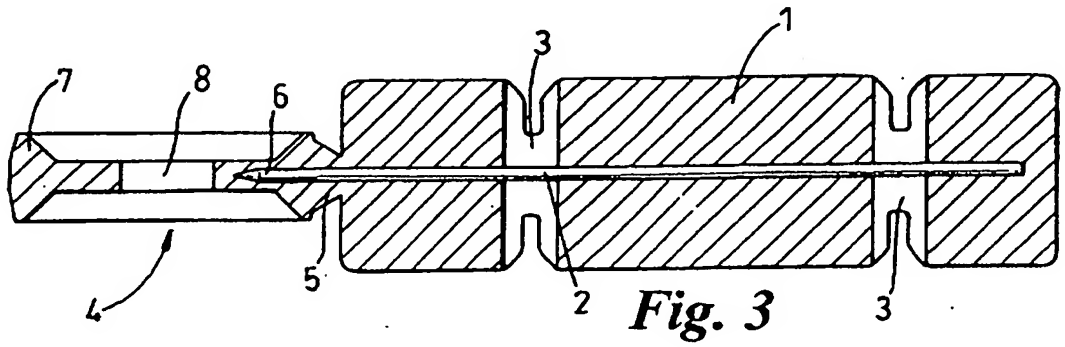

Fig. 3

GB 2 352 403 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

Improvements relating to Lancets

This invention relates to lancets.

Small blood samples are often taken by a pricker comprising a lancet and a firing device which momentarily projects the needle tip of the lancet. For obvious reasons, the lancets are disposable (ie. they are thrown away after a single use) and to shield the needle tip before use, to keep it clean and guard against accidental injury, it is common to have the tip embedded in a plastics cap moulded integrally with the main body of the lancet. The cap is twisted and pulled off immediately before use, the connection between it and the main body being a narrow neck.

There are many different kinds of lancet firing devices, but this invention is concerned with those which are "front loading". The lancet is inserted rear end first into a barrel with a spring firing mechanism. Once inside, the forward end of the barrel is closed by a cap. But this has an aperture through which the needle tip can project. The cap serves as a platform against which the users finger or thumb is placed.

A device with such a platform cap is described in US-4503856.

According to one aspect of the present invention there is provided a lancet with a plastics body encasing a needle and with a breakaway cap integrally moulded with the body, the needle tip being embedded in the cap or an extension thereof and being exposed when the cap is removed, wherein the cap is apertured and is adapted to provide a platform

for a lancet firing device, the needle tip momentarily projecting through the aperture in the cap when the cap serves as such a platform.

In other words, the cap is dual purpose and a platform does not have to be provided with the firing device.

Such firing devices are commonly cylindrical, and so the cap will usually be of disc form and centrally apertured.

Conveniently the axis of the lancet body will be aligned with a diameter of the disc cap, so that the needle tip projects radially into the outer periphery of the cap, and with its extremity short of the aperture. Alternatively, the needle tip may project into the end of a stem projecting radially from the circumference of the cap, this being necessary when the cap is used for priming the firing device, as described below.

Preferably, the cap will be symmetrical in relation to a central plane therethrough so that it can serve as a platform in either of two mutually reversed attitudes. In other words, the user does not have to be concerned with having it the right way round in order to fit it to the firing device.

According to another aspect of the present invention there is provided a lancet as defined above in combination with a lancet firing device open at its forward end and adapted to receive and retain the lancet cap.

For a better understanding of the invention, one embodiment will now be described, by way of example, with

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reference to the accompanying drawing, in which:

Figure 1 is a side view of a lancet before use,

Figure 2 is a rear end view of the lancet of Figure 1, and

Figure 3 is a section on the line III-III of Figure 1.

The lancet has an elongate plastics body 1 of cruciform section in the centre of which is embedded a needle 2. The needle is held during the moulding process by pins which leave recesses 3. A cap 4 is integrally moulded with the body 1 and connects to its forward end by a narrow neck 5. The needle 2 extends through this neck and terminates in a tip 6 which is embedded in the cap 4.

The cap 4 is slightly larger than the usual ones, and is in the form of a disc with a thickened rim 7 and a central aperture 8. The cap is symmetrical with respect to its central radial plane, which contains the axis of the needle. The needle tip 6 projects through the thickened rim 7 but terminates short of the aperture 8.

For use, the lancet is dropped rear end first into a firing device with an open circular front end. Its cruciform shape and the co-operating internal structure of the firing device prevents the lancet rotating, and so the cap 4 can be twisted off the body 1, the neck 5 breaking and leaving the tip 6 exposed. The mouth of the firing device is then plugged by the cap 4. This provides a dished platform for the user's finger or thumb, of which a small area bulges into the aperture 8 for pricking by the needle.

It is envisaged that the firing device could either

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have an annular groove just inside its mouth into which the platform cap 4 snaps, or a slot in the side very near the mouth so that the cap could be pushed in laterally and locate in a part-annular groove.

This lancet described above pre-supposes that the firing device has means for drawing back the lancet, after the cap has been removed, to a primed or cocked position from which it is then fired. Such devices are known. However, it is also possible to elongate the neck 5, but not the tip 6, so that after inserting the lancet into the firing device, the cap is used to press the lancet back to the primed position before being twisted off. The break will still occur adjacent the lancet body 1. This leaves the cap with a radially projecting stem, but that need not interfere with the subsequent fitting of the cap to the firing device which, if the cap is pressed in axially, could be provided with a slot in its leading end to accommodate that stem. Neither will the projecting stem interfere with use of the device. If the cap is entered laterally into a slot in the side, the stem can be left projecting and serve as a handle to withdraw the cap after use.

The lancet itself could be removed after use by being pushed forwards by an ejection plunger acting on its rear end, and if the platform cap 4 was held by having been pressed in axially, it would be forced to pop out before the lancet itself could escape. Both platform and lancet could be discharged directly into a sharps container without the user having any direct contact with the contaminated parts.

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The firing device can of course be used repeatedly, whichever way the cap is mounted, provided the cap is removable.

CLAIMS

1. A lancet with a plastics body encasing a needle and with a breakaway cap integrally moulded with the body, the needle tip being embedded in the cap or an extension thereof, and being exposed when the cap is removed, wherein the cap is apertured and is adapted to provide a platform for a lancet firing device, the needle momentarily projecting through the aperture in the cap when the cap serves as such a platform.

2. A lancet as claimed in Claim 1, wherein the cap is of disc form, centrally apertured.

3. A lancet as claimed in Claim 2, wherein the axis of the lancet body is aligned with a diameter of the disc cap, so that the needle tip projects radially into the outer periphery of the cap, and with its extremity short of the aperture.

4. A lancet as claimed in Claim 2, wherein the axis of the lancet body is aligned with a diameter of the disc cap, and the needle tip projects into the end of a stem extending radially from the circumference of the cap.

5. A lancet as claimed in any preceding claim, wherein the cap is symmetrical in relation to a central plane therethrough so that it can serve as a platform in either of two mutually reversed attitudes.

6. A lancet substantially as hereinbefore described with reference to the accompanying drawing.

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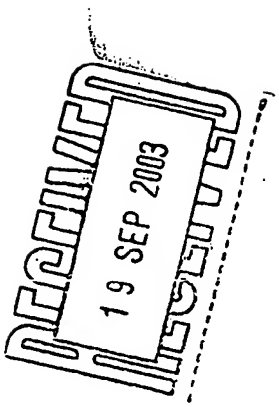
7. A lancet as claimed in any preceding claim, in combination with a lancet firing device open at its forward end and adapted to receive and retain the lancet cap.



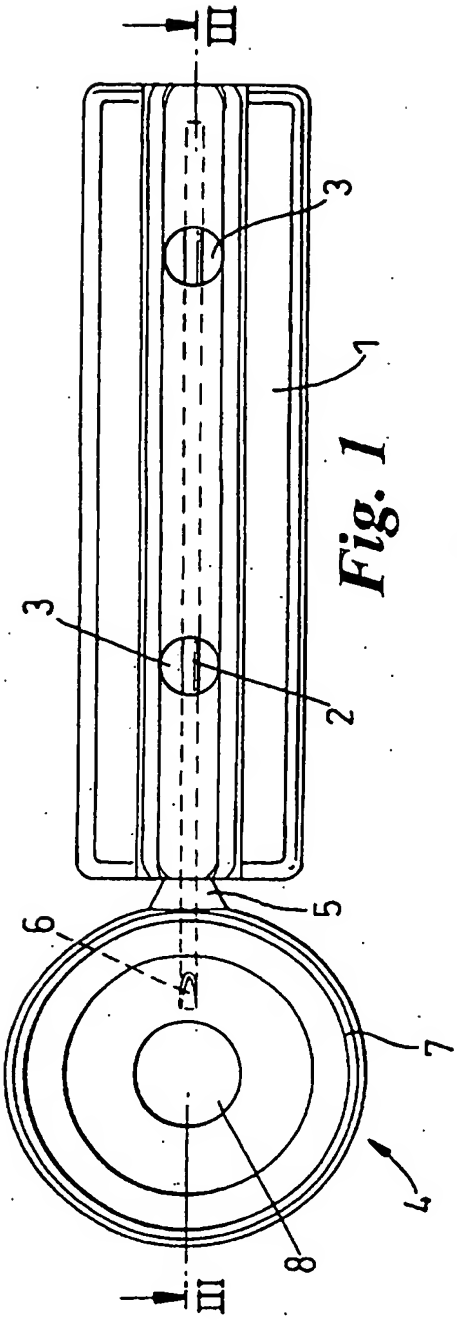


Fig. 1

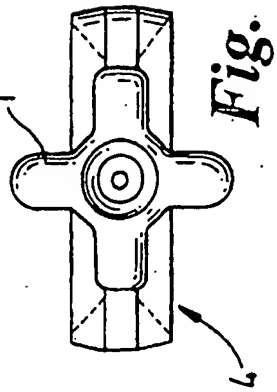


Fig. 2

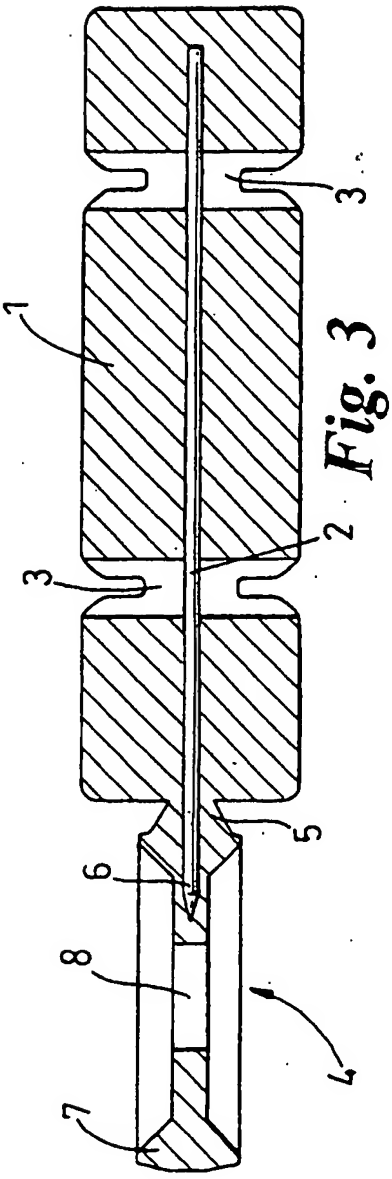


Fig. 3

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